



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

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ATLANTA, GEORGIA 30303-8960

December 19, 2008

Mr. Victor Bonilla  
BRAC Environmental Division  
2053 North D Avenue  
Building 400  
Fort Gillem, GA 30297-5151

Subject: EPA NEPA Comments on Department of the Army (DOA) Draft  
Environmental Impact Statement (EIS) for Disposal and Reuse of Fort  
McPherson, Georgia; CEQ No. 20080408; ERP No. COE-E15002-GA

Dear Mr. Bonilla:

To fulfill EPA's Clean Air Act (CAA) § 309 and National Environmental Policy Act (NEPA) § 102 (2)(C) responsibilities, EPA is enclosing its comments and providing an "environmental concerns (EC) -1"<sup>1</sup> rating to the above draft EIS for the proposed action: disposal of real property interests in Fort McPherson (the Fort) and the subsequent reuse of the Fort's land and infrastructure by transfer to third-parties by Sept. 15, 2011, pursuant to the 2005 Defense Base Closure and Realignment (BRAC) Commission's recommendations.

***Background***

DOA's real property interests involve a 487-acre property, with 2.3 million square feet of building space, and a 200-acre, 18-hole golf course. DOA's property disposal methods include: transfer to another federal agency, public-benefit conveyance, economic-development conveyance, negotiated sale, competitive sale, military-construction exchanges, conservation conveyance, and environmental-remediation cost conveyance. The transfer of six buildings, including the Lawrence Joel Army Health and Dental Clinic will be made to the U.S. Dept. of Veteran's Affairs per their expressed interest. Additionally both of the onsite Credit Unions have requested a conveyance of their currently leased property.

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<sup>1</sup> See enclosed EPA rating system criteria definition document.

### ***EIS Rating***

EPA's "environmental concerns" (EC) -1 rating acknowledges the fact that the proposed action is the McPherson Planning Local Redevelopment Authority's (MPLRA) preferred alternative, and after Sept. 15, 2011, it ceases being a significant federal action. EPA's review has identified potential environmental impacts that should be avoided and the enclosed comments identify suggestions for the addition of clarifying language and information into the final EIS. The concerns are outlined below and discussed in greater detail in the enclosed comments.

### ***Air Quality Concerns***

The analysis indicates neither the demolition, construction, or the future projected emissions for PM<sub>2.5</sub> are expected to exceed threshold emissions.<sup>2</sup> However, the demolition and construction emissions calculations assume 55% reduction due to twice-daily watering of haul roads and exposed surfaces, which assumes this will be done and will be an option should construction occur during a severe drought period.

### ***Water Supply Concerns***

The EIS does not indicate whether the City of Atlanta's assurance of potable-water capacity accounts for the extended drought cycles known to occur in the southeast such as the current one originating in 2006, which followed the previous 1998 – 2002 drought cycle.

### ***Storm-Water Runoff/Water Quality Concerns***

The State of Georgia has identified the South Utoy Creek as failing to meet its designated uses due to urban runoff; yet, this status has not been identified or discussed in the EIS. Moreover, Lake 1's important storm-water-detention function for capturing runoff from the adjacent MARTA station and surrounding parking facilities does not appear to have been identified. In light of the anticipated increase in impervious surface area associated new construction and roadway improvements, increased storm-water issues are reasonably foreseeable, which raises the concern regarding increased secondary and cumulative pollutant loads and exacerbated storm-water problems.

### ***Environmentally Sustainable Redevelopment Encumbrances***

The disposal of the Fort will result in nonfederal ownership and potentially a reduced emphasis on natural resource management and conservation previously governed by the existing

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<sup>2</sup> Referencing Tables 4.4-7 and 4.4-8, pages 4-54 and 4-55.

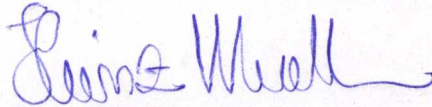


Integrated Natural Resources Management Plan and Army policies and regulations.<sup>3</sup> EPA supports the identified use of encumbrances to ensure important environmental values are maintained in the future, and in the enclosed comments, offers encumbrance-language recommendations for use in the final conveyance agreements.

### ***Conclusion***

In recognition of the fact that the property will be transferred out of DOA's control to third-party entities, we offer and respectfully request DOA consider the enclosed comments to assist in achieving federal environmental protection and environmental justice policies. Thank you for the opportunity to review and provided comments. If you wish to discuss this matter further, please contact Beth Walls (404-562-8309 or [walls.beth@epa.gov](mailto:walls.beth@epa.gov)) of my staff.

Sincerely,



Heinz J. Mueller, Chief  
NEPA Program Office  
Office of Policy and Management

Enclosures

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<sup>3</sup> P. 4-80



The McPherson Planning Local Redevelopment Authority (MPLRA) preferred alternative and after Sept. 15, 2011, it ceases being a significant federal action. However, EPA's review has identified potential environmental impacts of implementing the proposed action that should be avoided and minimized. The comments below identify suggestions for clarifying language and adding information for inclusion in the final EIS.

### ***Background***

DOA's real property interests involve a 487-acre property, with 2.3 million square feet of building space, and a 200-acre, 18-hole golf course. DOA's property disposal methods include: transfer to another federal agency, public-benefit conveyance, economic-development conveyance, negotiated sale, competitive sale, military-construction exchanges, conservation conveyance, and environmental-remediation cost conveyance. The transfer of six buildings, including the Lawrence Joel Army Health and Dental Clinic will be made to the U.S. Dept. of Veteran's Affairs per their expressed interest. Additionally both of the onsite Credit Unions have requested a conveyance of their currently leased property.

Regarding reuse of the Fort, the MPLRA was an appointed agency, with a Board of Directors, for planning oversight and coordination. Its purpose was to investigate the needs of the local communities, plan the reuse and economic development of the real estate, and to serve as the sole point of contact regarding base reuse planning with the DOA. The EIS communicated the expectation that an economic development conveyance for a portion of the property would be sought by the MPLRA.<sup>1</sup>

The MPLRA's preferred alternative divides the Fort into six districts: 1) a 35-acre High-Density Mixed Use area near the Metropolitan Atlanta Rapid Transit Authority (MARTA) station, 2) a 55-acre Park Residential District, 3) a 115-acre Employment Center, 4) a 65-acre Historic District, 5) an 82-acre Cambellton Residential District, and 6) a 150-acre Green and Event Space. According to the December 4, 2008, public meeting, each district will be conveyed individually to a private developer, potentially different developers, at varying times. The communicated intent was not for the whole property to be conveyed as one parcel, all at the same time to one developer.

The High-Density Mixed Use District entails 750 units of 8-10 story midrise residential buildings, street-level retail, and 1.16 million ft<sup>2</sup> of office space, grocery, hotel, and amenities with a mass-transit friendly design and the provision of multiple modes of transportation. Additionally, the Park Residential District is also proposed to be high-density residential with 1,200 units of multifamily buildings ranging in height from four to six stories with limited ground-floor retail space.

The Employment Center is the "anchor" consisting of 2.4 million ft<sup>2</sup> office, research, and lab space "centerpieced" with a proposed "Global Bioscience Center," with

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<sup>1</sup> P. 1-13. However would the MILRA be the appropriate entity to make this request? Or Fulton County since the 12/4/08 public meeting indicated that Fulton County would be the conveyance recipient?



240,000 ft<sup>2</sup> of retail space and 1,925 residential units. The Historic District is the existing 12-acre parade ground, with 40 National Register Historic Preservation listed buildings and several additional buildings proposed for historic designation. While the focus will be on preservation, adaptive reuse is planned in the form of ground-level retail and restaurant space, professional office space, cultural amenities – galleries, an events space, boutique lodging, and some single-family residences with two buildings identified for homeless-assistance.

The Cambellton Residential District is designated to be an extension to the existing historic Oakland City Neighborhood and to consist of a mix of housing densities, from 100 single-family units to 550 four or five-story multifamily housing units, and the reuse of 41 existing historic housing units and community facilities, including several units reserved for homeless providers scattered throughout.

The proposed Green & Event Space includes a 25-acre “event” space and a linear park formed by the day-lighting and restoration of the Utoy Creek headwaters, which are currently enclosed in underground culverts. Here, the Georgia Department of Transportation (GDOT) proposes to restore approximately 4,000 ft of the original stream and provide a 300’ wide buffer – 150’ on each side, forming a 27-acre backbone to the linear park to the North. The EIS mentions that the Eastern Branch could benefit from the same treatment but is unclear whether it would be included in GDOT’s proposal.<sup>2</sup> Natural storm-water control features are proposed at various points with a large basin in the area prone to flooding at the existing outflow.

Georgia’s Governor created the McPherson Implementing Local Redevelopment Authority (MILRA) to succeed the MPLRA as the implementing authority for reuse/redevelopment.<sup>3</sup> Unlike the MPLRA, the MILRA has the authority to receive, purchase, lease, or otherwise acquire land from the federal government, to develop all projects and the ability to borrow money, issue revenue bonds, and perform other necessary actions. The December 4, 2008, public hearing indicated that Fulton County would be the entity receiving the conveyance of the Fort real estate.

A 2007 Environmental Condition of Property Report found past operations resulted in the release of contaminants at localized on-site areas.<sup>4</sup> Approximately 65 acres have been classified as areas are not suitable for transfer by deed until further evaluation and/or remedial action has occurred and the parcels are reclassified suitable for transfer or lease, subject to applicable qualifiers, which may include notification requirements or use restrictions due to the presence of non-CERCLA materials such as asbestos or lead paint as appropriate. According to the December 4, 2008, public-meeting presentations, all contaminated sites are expected to be clean prior to the September 15, 2011 conveyance deadline.

### ***Air Quality Concerns***

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<sup>2</sup> P. 42 of the Fort McPherson Outreach & Land Use Plan (September 2007).

<sup>3</sup> P. 2-7.

<sup>4</sup> P. 2-11.



The analysis indicates neither the demolition, construction, or the future projected emissions for PM<sub>2.5</sub> are expected to exceed threshold emissions.<sup>5</sup> However, the demolition and construction emissions calculations assume 55% reduction due to twice-daily watering of haul roads and exposed surfaces, which assumes this will be done and will be an option should construction occur during a severe drought period, e.g., the “exceptional” (defined as the 100-year) drought the southeast USA is currently experiencing.

EPA noted the seven other ongoing planning efforts underway for areas surrounding the Fort<sup>6</sup> and encourages the plan for a proposed streetcar line to terminate at the Fort in addition to plans for transit-oriented development. EPA recommends that pedestrian-friendly improvements be considered in the Fort's proposed reuse plans.

EPA also noted the expectation for significant adverse effects for transportation and significant adverse cumulative effects for air quality and land use has been identified,<sup>7</sup> which may also translate into future water-quality concerns. Additionally, the proposed redevelopment may increase regional economic growth, which in turn may result in detrimental regional air quality effects,<sup>8</sup> water-quality impairment, and increased water demands upon a finite water resource subject to cyclical droughts of varying severities.<sup>9</sup>

### ***Water Supply Concerns***

The current potable water supply system is projected to be adequate for a projected water-use increase of 1.4 million gallons per day<sup>10</sup> over baseline conditions.<sup>11</sup> The City of Atlanta anticipates it will be able to supply water for the projected growth within its service area through 2035 and beyond.<sup>12</sup> However, potable water is drawn directly from the City of Atlanta and City of East Point systems, which draw from the Chattahoochee River.<sup>13</sup>

The EIS does not indicate whether the City of Atlanta's assurance of potable-water capacity accounts for the extended drought cycles known to occur in the southeast such as the current one originating in 2006, which followed the previous 1998 – 2002 drought cycle. For example back in October 2007, State officials were issuing warnings concerning the City's primary water source, Lake Lanier being less than three months

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<sup>5</sup> Referencing Tables 4.4-7 and 4.4-8, pages 4-54 and 4-55.

<sup>6</sup> P. 4-160.

<sup>7</sup> P. ES-9.

<sup>8</sup> P. 4-55.

<sup>9</sup> U.S.G.S. Open-File Report 00-380 (October 2000) available at <http://ga.water.usgs.gov/publications/ofr00-380.pdf>

<sup>10</sup> Assumes 55 gpd for each resident and 0.23 gft<sup>2</sup>d for commercial and retail space.

<sup>11</sup> P. 4-174.

<sup>12</sup> Id.

<sup>13</sup> Id.



from depletion at the same time the City of Atlanta's secondary water source, Lake Allatoona was 16 feet lower than normal and losing a foot of water per week.

Moreover water withdrawals from two Georgia river basins: the Appalachian - Chattahoochee - Flint River basin and the Alabama - Coosa - Tallapoosa River basin, have been the subject of an unresolved, 18-year dispute between Georgia and its two downstream neighbors: Alabama and Florida. Furthermore, 13 long-term, severe droughts impacting the State of Georgia have been documented during the past 325 years. Consequently the State's Climatologist has recommended that water management and drought mitigation plans should take known natural variability in the climate system, which for Georgia means a drought of two years or more at least once every 25 years independent of population-growth associated water demands.<sup>14</sup> The EIS appears not to have incorporated these recommendations into its water-availability analysis.

### ***Storm-Water Runoff/Water Quality Concerns***

The State of Georgia has identified the South Utoy Creek as failing to meet its designated uses due to urban runoff; yet, this status has not been identified or discussed in the EIS. Moreover, Lake 1's important storm-water-detention function for capturing runoff from the adjacent MARTA station and surrounding parking facilities does not appear to have been identified.

In light of the anticipated increase in impervious surface area associated new construction and roadway improvements, increased storm-water issues are reasonably foreseeable, which raises the concern regarding increased secondary and cumulative pollutant loads and exacerbated storm-water problems.

This anticipated increase also raises the need for a permanent water quality pond of approximately 10 acres plus additional 10-acre temporary retention capacity to ensure the increased storm-water runoff is captured on site to achieve and maintain water-quality standards.<sup>15</sup> Furthermore, the use of wastewater-treatment controls to address storm-water-associated pollution is very energy intensive and increases the carbon footprint of the wastewater treatment plant.<sup>16</sup>

### ***Environmentally Sustainable Redevelopment Encumbrances***

The disposal of the Fort will result in nonfederal ownership and potentially a reduced emphasis on natural resource management and conservation previously governed by the existing Integrated Natural Resources Management Plan and Army policies and regulations.<sup>17</sup> The importance of encumbrances to ensure environmentally sustainable

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<sup>14</sup> *Historical Droughts in Georgia and Drought Assessment and Management* (2003) David Stooksbury, State Climatologist and Assistant Professor of Engineering and Atmospheric Sciences, The University of Georgia. Available at <http://cms.ce.gatech.edu/gwri/uploads/proceedings/2003/Stooksbury.pdf>

<sup>15</sup> P. 4-172.

<sup>16</sup> <http://www.eenews.net/Greenwire/2008/12/16/23/>

<sup>17</sup> P. 4-80



redevelopment of the Fort, including the preservation and promotion of environmental values in property transfer and reuse planning were identified.<sup>18</sup> EPA supports this approach, and to ensure important environmental values are maintained in the future, offers the following recommendations for both inclusion in encumbrance language of the final conveyance agreements and for implementing by the implementing entities, e.g., Fulton County and the MILRA.

#### *Air Quality/Sustainable Development*

Land use impacts on travel demand and vehicle emissions have emerged as an important topic regarding the Metro Atlanta Area's ability to conform to the CAA requirements. Residential and employment density, intermixing of uses, and street connectivity have been found in the literature to be predictors of modal choice, trip duration, vehicle miles traveled (VMT), cold-start trip generation, and mean trip speed. Empirical data show that compact, mixed-use, transit- and pedestrian-accessible infill development does lead to less driving than the development typical in Atlanta.

Given the Metro Atlanta Area's current nonattainment status and potential impacts to local and regional emissions from a project of this magnitude and scope, encumbrance language to facilitate achievement of the EIS-assumed minimum ten percent transit mode split is recommended. This language should speak to a comprehensive alternative transportation program, especially for employees and residents of the new development, and promote transit-oriented development, biking and walking paths, telecommuting, the use of mass transit, and car pooling. Such a comprehensive program could provide incentives including:

- Transit discounts for on-site employees.
- Increased provision of shuttle bus service or other transit service.
- Increased parking rates, by time of day, by facility, and by parking type, as needed.
- Reduction of available parking facilities or spaces.
- Carpool/vanpool matching services.
- Providing free or highly discounted annual regional transit passes with each residential unit (included in leases and property covenants).
- Addition of traffic calming measures, such as raised pedestrian crosswalks, sidewalk bump outs, diagonal on street parking, or pedestrian islands.
- Provisions and support for neighborhood car rental, car sharing systems, and real time ridesharing services for residents and visitors.
- Provision of additional facilities and amenities such as bus shelters, bike racks and lockers, sidewalks, bike paths, park and ride facilities, telephones at shelters, newsstands, convenience retail, and daycare facilities.
- Provision of guidance for telecommuting and alternative work schedules.

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<sup>18</sup> P. 3-8.



- Employee Commuter Choice incentives employees would be given the opportunity to purchase employer discounted transit passes and vanpool benefits using pre-tax dollars.

Moreover, the implementation of comprehensive alternative transportation program could assist the Metro Atlanta Area maintain, possibly improve air quality, and improve level-of-service problems at key intersections. Moreover both the environment and the surrounding community would benefit.

### Construction and Demolition Debris and Wastes

According to a Georgia Department of Natural Resources (GDNR) survey, the Department of Defense is the State's largest employer and one of Georgia's largest generators of waste.<sup>19</sup> According to GDNR, of those surveyed, 76 percent believed there was an opportunity to increase recycling of construction and demolition debris. Construction and demolition debris includes waste from building and transportation-related construction, renovation, and removal including land-clearing debris.

Encumbrance language is recommended to reduce the generation of waste and environmental degradation associated with land filling construction and demolition debris by recycling usable construction and demolition debris, e.g., promoting the use of recycled materials in lieu of raw. Furthermore the use of recycled construction and debris waste materials in the proposed new construction projects is to be encouraged. Moreover, recycled materials are energy efficient, e.g., recycled polystyrene and wood block building products have energy efficiency ratings above that of conventional insulation and building materials. Use of recycled building products in new construction will reduce landfill demand. For example, plastics that would otherwise go into a landfill can be recycled and turned into building blocks, reducing the need to harvest lumber from forests.

And for roads and parking lots, green asphalt is a product based on a process that reclaims or recycles up to 50-percent of the existing asphalt pavement and mixes it with new materials at a lower temperature than previously achievable in the industry, which also facilitates reduced green house gas emissions.

### Green Building

Buildings in the United States account for 40-percent of total energy use, 12-percent of the total water consumption, 68-percent of total electrical consumption, 38-percent of total CO<sub>2</sub> emissions, and 60-percent of total non-industrial waste generation. On average, green buildings reduce energy use by approximately 30-percent, CO<sub>2</sub> emissions by 35-percent, water use by 30 to 50-percent, and results in a waste cost savings of 50 to 90-percent.<sup>20</sup>

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<sup>19</sup> [http://www.p2ad.org/documents/govt\\_dod\\_solid1.html](http://www.p2ad.org/documents/govt_dod_solid1.html)

<sup>20</sup> <http://climateintel.com/?s=Greening+of+affordable+housing>



Building design and construction practices do not appear to be discussed in the EIS for the proposed new construction. EPA recommends encumbrance language facilitating the use of Leadership in Energy and Environmental Design (LEED) Green Building Rating System, which is also consistent with DOA's policy.<sup>21</sup> The LEED program promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. EPA recommends indoor environmental quality should be a priority in the design and construction of these buildings. EPA's Indoor Air Quality website ([www.epa.gov/iaq](http://www.epa.gov/iaq)) provides suggestions for how to reduce indoor pollution.

Regarding water conservation, EPA encourages all federal agencies to include *WaterSense*<sup>22</sup> products and services in their implementation strategies.<sup>23</sup> EPA launched the *WaterSense* program in 2007 to promote water-efficiency and protect the future of the nation's water supply. For example, toilets account for nearly 30 percent of residential indoor water consumption and are a major source of wasted water due to leaks and/or design inefficiency. *WaterSense* is helping consumers identify high performance, water-efficient toilets. All water savings realized through the use of *WaterSense*-labeled products and services have a corresponding reduction in energy consumption, associated greenhouse gas emissions and energy and water costs.

Other energy efficiency suggestions include reducing heat flow in and out of buildings, using windows to maximize solar lighting and reducing the need for electrical lighting, incorporating a heat-reflecting roof (or green roof) and windows, in addition to using self-dimming lights, energy-efficient light bulbs when natural lighting is unavailable, and other energy efficient products and practices, e.g., the ENERGY STAR program.<sup>24</sup>

### Environmental Justice

The area surrounding the Fort is generally developed and characterized primarily by minority and low-income single-family, mixed, and low density residential interspersed with commercial and industrial uses. Industrial land use is located directly to the east and south west of the Fort. Commercial uses are located to the northwest and southeast and south of the MARTA station. Low density and mixed residential uses are located directly to the southeast, northeast, and west of the Fort.<sup>25</sup> The Fort is surrounded by several historic neighborhoods including Oakland City (north), Sylvan Hills (east), and City of East Point.

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<sup>21</sup> January 5, 2006 memorandum, "Sustainable Design and Development Policy Update – SpiRiT to LEED Transition.

<sup>22</sup> <http://www.epa.gov/watersense/>

<sup>23</sup> National Water Program Strategy: Response to Climate Change, Office of Water, U.S. EPA, September 2008, see: <http://www.epa.gov/water/climatechange/index.html>

<sup>24</sup> ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy, see: [http://www.energystar.gov/index.cfm?c=about.ab\\_index](http://www.energystar.gov/index.cfm?c=about.ab_index)

<sup>25</sup> P. 4-13.



The proposed action may create disproportionate adverse impacts in the form of increased traffic, noise, and air quality upon the surrounding minority and low-income populations.<sup>26</sup> Given the potential for these impacts and the need to comply with Executive Order 12898, EPA recommends encumbrance language requiring adoption of all available and practicable means for avoiding or minimizing these impacts.

Additionally, all conveyance agreements should require significant and adequate public outreach and notification to allow the surrounding communities to be adequately notified and their concerns heard, and addressed as part of the redevelopment. EPA recommends the encumbrance language require negotiation with the community officials on mutually agreeable and appropriate public outreach measures, including timely coordination with the local community leaders, and provision of notices in the appropriate local community networks, e.g., churches, grocery stores, local newsletters, etc., in lieu of publication in journals that are not used or relied upon as a community resource, e.g., the Atlanta Journal Constitution, Fulton County Daily Report, or the an Internet Web Page. The surrounding community may not have regular access to or skills to use the Internet and its associated infrastructure, e.g., computer access and associated skills. For example, District 12 Councilmember Joyce M. Sheperd's December 11, 2007, letter taking issue with the three day notice of a December 6, 2007 public comment meeting on the EIS and objecting to using the newspaper as a venue for communication.<sup>27</sup>

### Event Space

The proposed 25-acre event-space is envisioned as a regionally significant special events venue where the Cities of Atlanta and East Point would share maintenance and hosting of events.<sup>28</sup> This proposed feature's impacts upon the surrounding communities, beyond concert noise - the band shell designed to direct the sound of concerts away from existing off-post residential areas,<sup>29</sup> does not appear to have been analyzed.

It is reasonably foreseeable that significant adverse impacts associated with increased traffic, noise, air quality, and overflow parking demands will impact the surrounding communities during scheduled events. No analysis appears to have been done to model potential increased noise, traffic, and parking levels associated with "typical" events. The potential for increased traffic and traffic backlogs raises concerns for potential localized carbon monoxide (CO) hot-spots. Furthermore, the reliance upon a qualitative comparison with Chastain Park for describing the impacts of this facility is inappropriate. Chastain Park is significantly smaller than the proposed 25-acre "event-space."

Consequently, EPA recommends a more robust analysis of the potential impacts associated with the proposed event space despite their temporary character. Additionally,

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<sup>26</sup> P. 4-128.

<sup>27</sup> Contained in Appendix G.

<sup>28</sup> P. 42 of the Fort McPherson Outreach & Land Use Plan (September 2007).

<sup>29</sup> P. 4-65.



encumbrance language providing relief for the above identified reasonably foreseeable impacts is recommended. For example, prohibiting the removal of and requiring the maintenance of the existing tree buffer along the southern border of the base would provide a noise buffer with potentially significant noise attenuation benefits and wildlife habitat.

#### Water Conservation

Since drought is a normal component of the Southeastern US climate system,<sup>30</sup> the proposed action should take the opportunity to install a drought-tolerant or water conservation infrastructure, e.g., collecting and using storm-water runoff, using reclaimed water for uses not requiring potable water quality. For example, at the December 4, 2008, public meeting it was noted that the onsite lakes provided for all of the Fort's irrigation needs without tapping into any potable water supplies. EPA has prepared *Guidelines for Water Reuse*<sup>31</sup> that examines opportunities for substituting reclaimed (or grey) water where potable water quality is not required. Consequently, EPA recommends encumbrance language to address the need for a drought-tolerant or water conservation infrastructure.

#### Water Quality

As a mechanism to ensure appropriate long-term protection of water quality, EPA recommends encumbrance language requiring maintenance of important existing storm-water management features, e.g., Lake 1, and the use of Low Impact Development (LID) practices in the engineering, design, and construction of new facilities, including parking structures.

LID practices are designed to replicate pre-development hydrologic characteristics and prevent an increase in pollutant loads above pre-development conditions. LID uses existing site characteristics to facilitate infiltration, evaporation, and retention of storm-water runoff.

EPA recommends encumbrance language requiring integration of storm-water control features in the future redevelopment to prevent impervious surfaces from compounding storm-water-related issues in South Utoy Creek and other neighboring surface waters. Moreover the use of LID practices, e.g., pervious parking lots, storm-water ponds, rain gardens, and other water-retention devices are appropriate for maintaining hydrographic conditions and lessening environmental-quality deterioration, particularly downstream aquatic and riparian habitats. Information on low-impact development is available at: [www.lowimpactdevelopment.org](http://www.lowimpactdevelopment.org).

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<sup>30</sup> *Historical Droughts in Georgia and Drought Assessment and Management* (2003) David Stooksbury, State Climatologist and Assistant Professor of Engineering and Atmospheric Sciences, The University of Georgia. Available at <http://cms.ce.gatech.edu/gwri/uploads/proceedings/2003/Stooksbury.pdf>

<sup>31</sup> These guidelines are available in PDF format at two locations: <http://www.epa.gov/ord/NRMRL/pubs/625r04108/625r04108.pdf> and <http://www.epa.gov/region09/water/recycling/index.html>



Lastly with regard to the proposed "day-lighting" and restoration of the Utoy Creek headwaters, while this action is beneficial to the aquatic habitat it also exposes the headwaters to storm-water runoff pollution. Consequently, EPA recommends encumbrance language that institutionalizes the GDOT's proposed 300' wide stream buffer to protect the stream's water quality. EPA would also recommend similar language for all the Fort's surface water features.